

WHAT IS CLAIMED IS:

1. A method for manufacturing a nonreciprocal circuit device including a metal case containing central conductors, a ferrite core near the central conductors, and a permanent magnet for applying a static magnetic field to the ferrite core, the method comprising the steps of:

forming a thermosetting resin layer on an outer surface of the metal case; and

heating the entire nonreciprocal circuit device after adjusting the magnetic force of the permanent magnet to simultaneously thermally demagnetize the permanent magnet and harden the thermosetting resin layer.

2. The method for manufacturing a nonreciprocal circuit device according to Claim 1, wherein the heating temperature is set between 85 and 230°C.

3. The method for manufacturing a nonreciprocal circuit device according to claim 2, wherein said device comprises a high-temperature solder which melts at 230°C or higher.

4. A nonreciprocal circuit device comprising:

a metal case;

central conductors;

a ferrite member arranged near the central conductors;

a permanent magnet for applying a static magnetic field to the ferrite core; and

a thermosetting resin layer arranged on an outer surface of the metal case, the thermosetting resin layer being hardened by heating the entire nonreciprocal circuit device after adjusting the magnetic force of the permanent magnet.

5. The nonreciprocal circuit device according to Claim 4, wherein the temperature at which the thermosetting resin layer is hardened is between 85 and 230°C.

6. The nonreciprocal circuit device according to one of Claims 4 and 5, wherein the thermosetting resin layer is formed of a phenolic resin or an epoxy resin.

7. The nonreciprocal circuit device according to one of Claims 4 and 5, further comprising ground terminals arranged on the metal case, wherein the thermosetting resin layer is arranged on parts of the bottom surface of the metal case spaced away from the ground terminals.

8. The nonreciprocal circuit device according to one of Claims 4 and 5, wherein the ground terminals protrude downward from the metal case.

9. The nonreciprocal circuit device according to one of Claims 4 and 5, wherein the thermosetting resin layer is arranged on the top surface of the metal case.

10. The nonreciprocal circuit device according to one of Claims 4 and 5, wherein the metal case comprises upper and lower yokes and the thermosetting resin layer is arranged at all or part of an area where the two yokes are bonded to each other.

11. The nonreciprocal circuit device according to Claim 10, further comprising solder arranged at the area where the yokes are bonded to each other.

12. The nonreciprocal circuit device according to one of Claims 4 and 5, wherein the surface of the metal case and the thermosetting resin layer have contrasting colors so as to make

resin layer defects visible.

13. The nonreciprocal circuit device according to one of claim 12, wherein the surface of the metal case is metal-plated and the color of the thermosetting resin layer is black.

14. A communication apparatus incorporating the nonreciprocal circuit device according to one of Claims 4 and 5.

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